

WHAT IS CLAIMED IS:

1. A time-delay soft (1) switch comprising:

one or more first layers (10) of material having first elastomeric properties, said one or more first layers (10) having at least one first

5 electrically conductive surface (12); and

one or more second layers (20) of material having second elastomeric properties, said one or more second layers (20) having at least one second electrically conductive surface (22),

10 wherein said one or more first layers (10) closely cover said one or more second layers (20).

2. The time-delay soft switch (1) of claim 1, wherein said at least one second electrically conductive surface (22) is one or more third layers (30) of conductive material connected to said one or more second layers (20).

15 3. The time-delay soft switch (1) of claim 1, wherein said first elastomeric properties of said one or more first layers (10) are more responsive relative to said second elastomeric properties of said one or more second layers (20).

20 4. The time-delay soft switch (1) of claim 2, wherein the soft switch is seamlessly integrated into a pressure sensitive smart fabric application.

5. The time-delay soft switch (1) of claim 2, wherein said first and second electrically conductive surfaces (22) are electrically connected when the soft switch is in a relaxed state.

6. The time-delay soft switch (1) of claim 2, wherein said first
5 and second electrically conductive surfaces (22) are electrically connected when the soft switch is in a compressed state.

7. The time-delay soft switch (1) of claim 3, wherein said first and second electrically conductive surfaces (22) electrically disconnect for a predefined period of time when the soft switch is compressed and
10 released.

8. The time-delay soft switch (1) of claim 7, wherein said first and second electrically conductive surfaces (22) electrically reconnect after said predefined period of time.

9. The time-delay soft switch (1) of claim 7, wherein said
15 predefined period of time is dependant on said first elastomeric properties of said one or more first layers (10) of material and said second elastomeric properties of said one or more second layers (20) of material.

10. The time-delay soft switch (1) of claim 3, wherein said one or more first layers (10) of material return to a relaxed state quicker than said
20 one or more second layers (20) of material when the soft switch is compressed and released.

11. The time-delay soft switch (1) of claim 1, wherein said first elastomeric properties of said one or more first layers (10) of material are less responsive relative to said second elastomeric properties of said one or more second layers (20) of material.

5 12. The time-delay soft switch (1) of claim 11, wherein said at least one second electrically conductive surface (22) is one or more third layers (30) of conductive material connected to said one or more second layers (20).

10 13. The time-delay soft switch (1) of claim 11, wherein the soft switch is used in pressures sensitive smart fabric applications.

14. The time-delay soft switch (1) of claim 11, wherein said first and second electrically conductive surfaces (22) are electrically disconnected when the soft switch is in a relaxed state.

15 15. The time-delay soft switch (1) of claim 11, wherein said first and second electrically conductive surfaces (22) are electrically connected when the soft switch is in a compressed state.

16. The time-delay soft switch (1) of claim 12, wherein said first and second electrically conductive surfaces (22) electrically connect for a predefined period of time when the soft switch is compressed and
20 released.

17. The time-delay soft switch (1) of claim 16, wherein said first and second electrically conductive surfaces (22) electrically re-disconnect after said predefined period of time.

18. The time-delay soft switch (1) of claim 16, wherein said
5 predefined period of time is dependant on said first elastomeric properties of said one or more first layers (10) of material and said second elastomeric properties of said one or more second layers (20) of material.

19. The time-delay soft switch (1) of claim 12, wherein said one or more second layers (20) of material return to a relaxed state faster than
10 said one or more first layers (10) of material when the soft switch is compressed and released.

20. The time-delay soft switch (1) of claim 1, wherein said one or more first layers (10) of material and said one or more second layers (20) of material operatively cooperate to selectively connect and/or disconnect
15 said first and second electrically conductive surfaces (22), and thereby close a circuit, for a predefined period of time via a pressure interaction.